1,139,018

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Screw Cap with Locking Means

I, ALRIK CIVER LINDSTROM, a Swedish Subject, of Harpsundsvägen 164, Bandhagen, Sweden, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a screw cap of the type comprising a top and a depending side wall and one or more sealing flanges projecting downwardly inside the cap from the top of the cap for cooperation with the end of the mouth wall of a bottle or the like.

Screw caps of this type have an effective sealing capability after they have been screwed onto a bottle and also during some time afterwards. However, after bottles provided with screw caps have been stored for some time the cap has a tendency to become less tight, probably because of cold flow of the material of the cap which usually consists of a thermoplastic material, resulting in that the bottle will not be tightly closed.

It has been found that the cap can be considerably better secured to the bottle if in accordance with this invention a lock flange extends downwards inside said cap in close proximity to the wall of the cap, whereby to effect an elastic attachment of the screwed cap due to elastic compression of the lock flange between the outside of the mouth wall of the bottle or the like and the side wall of the cap. Tests have proved that in case of equal tightening moments the moment required for unscrewing a screw cap according to the invention from a bottle is about 75% greater than the corresponding moment required for unfastening a conventional screw cap having sealing flanges only.

The invention is now described more closely with reference to the annexed drawing in which

Fig. 1 is a sectional view of a screw cap provided with a lock flange and

Figs. 2a and 2b are sectional views of screw caps according to the invention having different configurations of sealing flanges.

By way of example, the screw cap illustrated in Fig. 1 is made by injection moulding a thermoplastic material. The top of the cap is formed with a thin sealing flange 2 which is concentric with the cap. The purpose of this sealing flange is to effect a tight closure of a bottle or the like, not shown, by engaging the inner edge of the mouth wall of the bottle. As mentioned above, the sealing effect is satisfactory as long as the screw cap remains reliably screwed onto the bottle. However, if the screw cap becomes less tight after the bottle has been stored for some time the sealing will no longer be effective. In order to prevent the screw cap from getting loose, there is provided a lock flange 4 in close proximity to the wall of the cap as shown in Fig. 1. The lock flange need not necessarily serve as a sealing member. When the cap is being screwed onto the bottle, not shown, the outside of the mouth wall of the bottle will elastically force the flange 4 toward the wall of the cap and slightly upwardly, with the result that after the cap has been completely screwed onto the bottle an elastic locking action will be obtained between the cap and the bottle.

Figs. 2a and 2b illustrate examples of an additional sealing flange 6 and 8, respectively, which may be provided in a screw cap according to the invention for obtaining a larger sealing area in a manner known per se.

Many different embodiments of the screw

[Price 4s. 6d.]

cap according to the invention defined in the appended claims are conceivable to meet various requirements such as to the selection of the material of the screw cap. The lock flange need not necessarily extend along a closed line. It may be replaced by a plurality of shorter flanges located on a common circular line close to the inner wall of the cap. These shorter flanges need not necessarily have the same radius of curvature as said circular line.

In the production of bottles which are to be provided with a screw cap according to the invention the moulds used therefor can in a suitable way be so worked that the almost inevitably unsymmetrical and uneven shape of the outside of the mouth wall is further emphasized, by means of which the effect of the lock flange is further supported.

WHAT I CLAIM IS :—

1. A screw cap comprising a top and a depending side wall and one more sealing flanges projecting downwards inside the cap from said top for co-operation with the end of the mouth wall of a bottle or the like, characterised in that a lock flange extends downwards from said top inside the cap in proximity to the wall of the cap, whereby to effect an elastic locking of the screwed cap with a bottle or the like due to elastic compression of the lock flange between the outside of the mouth wall of said bottle or the like and the side wall of the cap.

2. A screw cap as claimed in claim 1, wherein the lock flange extends along a closed circle.

3. A screw cap as claimed in claim 1, wherein the lock flange consists of a plurality of short flanges extending along a common circular line.

4. A screw cap as claimed in claim 3, wherein the radii of curvature of the short flanges are different from the radius of curvature of the common circular line.

5. A screw cap substantially as described with reference to Fig. 1, Fig. 2a or Fig. 2b of the accompanying drawing.

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1,139,018 COMPLETE SPECIFICATION
1 SHEET

This drawing is a reproduction of the Original on a reduced scale.

FIG.1

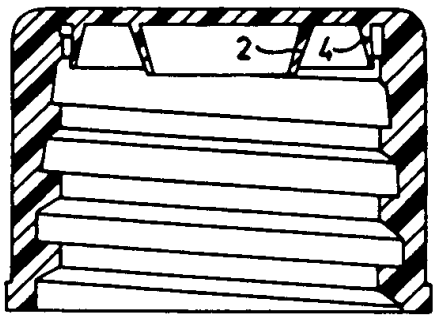

FIG.2a

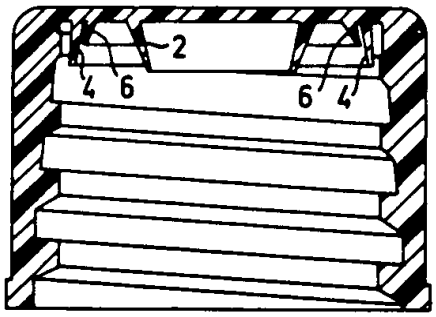

FIG.2b